RECEIVED
CENTRAL FAX CENTER

NOV 23 2005

Customer No. 27061

Patent
Attorney Docket No. GEMS8081.255

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	Dean et al.
Serial No.	:	10/065,247
Filed	:	September 27, 2002
For	:	Embedded Thermal Control System for High Field MR Scanners
Group Art No.	:	2123
Examiner	:	Jaworski, F.

CERTIFICATION UNDER 37 CFR 1.8(a) and 1.10

I hereby certify that, on the date shown below, this correspondence is being:

Mailing

☐ deposited with the US Postal Service in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

37 CFR 1.8(a) ☐ with sufficient postage as first class mail

37 CFR 1.10 ☐ As "Express Mail Post Office to Addressee" Mailing Label No.

Transmission

■ transmitted by facsimile to Fax No.: 571-273-8300 addressed to Examiner Jaworski at the Patent and Trademark Office.

Date: 11/23/05

Jessica A. Calloway
Signature

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REQUEST FOR PRE-APPEAL BRIEF CONFERENCE

Dear Sir:

A Notice of Appeal is filed concurrently herewith. Applicant hereby requests pre-appeal review of the final rejection in the above-identified application. No amendments are being filed with this request. The review is requested for the reasons set forth below.

REMARKS

Claims 1-17 are pending in the present application. In the Advisory Action, mailed November 16, 2005, the Examiner maintained a rejection of claims 1, 2, 5, and 6 under 35 U.S.C. §102(e) as being anticipated by Ishihara et al. (USP 5,916,161). The Examiner stated that "the reference structure is capable of performing (sic) to adjust gradient coil power in response to sensed thermal control input." ADVISORY ACTION, Nov. 16, 2005, p. 2 (emphasis added). Applicant believes that the Examiner's rejection is not only clearly in error factually, but is also legally incorrect. Accordingly, this matter is believed to be correctly decided by a Pre-Appeal Brief Conference.

First, Ishihara et al. cannot anticipate claims 1, 2, 5, and 6 under 35 U.S.C. §102(e) when it is only alleged to merely "being capable of performing" that called for in the claims. Ishihara et al. does not teach or disclose that which is called for in the claims. At best, Ishihara et al. can only be applied in a rejection under 35 U.S.C. §103(a). Nevertheless, there is no disclosure in Ishihara et al. to adjust gradients in response to temperature. In fact, Ishihara et al. leads those skilled in the art to conclude that only RF pulse adjustment is needed. Therefore, one skilled in the art would be led away from the invention by Ishihara et al. That is, Ishihara et al. teaches away from the claimed invention by teaching that RF pulse sequence adjustment is sufficient for thermal control in an MRI application. Applicant hereby requests panel review of the rejection of claims 1, 2, 5, and 6 under 35 U.S.C. §102(e) as being anticipated by Ishihara et al.

It is clear that the Ishihara et al. teaches adjustment of the RF pulses of a pulse sequence – not the gradient pulses. Ishihara et al. states that "it is therefore an object of the present invention to provide a magnetic resonance imaging apparatus capable of measuring a temperature increase due to an application of RF magnetic fields for data acquisition purpose..." ISHIHARA ET AL., col. 1, line 66 – col. 2, line 2. The reference also discloses that "as for the manner of changing the pulse sequence, the first things to do is to suppress the pulse power and to increase the pulse application time

span." ISHIHARA ET AL., col. 16, lines 35-37. Ishihara et al. next discloses that "it is also possible to reduce a number of RF pulses to be applied, or to widen the RF pulse application interval." ISHIHARA ET AL., col. 16, lines 37-29. The reference then teaches that "in a case of changing the RF pulse power, etc., automatically, it is necessary that an operator enters the current RF pulse input power (input voltage), application interval, application period, and pulse waveform, or these factors are measured automatically, or else these factors are read out from a file storing these factors in advance." ISHIHARA ET AL., col. 16, lines 55-60.

In fact, to conclude that Ishihara et al. is not limited to adjustment or control of the RF pulses is to ignore the very problem that the technique of Ishihara et al. is designed to address. In the Background of the Invention section of the reference, Ishihara et al. goes to great length to expound upon the effects of the application of RF power onto a living body. Specifically, Ishihara et al. states "when many RF magnetic fields are applied according to this imaging method, a temperature inside a living body increases due to the induced heating phenomenon." ISHIHARA ET AL., col. 1, ll, 20-23. The reference then describes the history of the U.S. Food and Drug Administration implementation of safety standards for MRI studies in 1982. Specifically, the reference discloses that the FDA recommended "to limit an application of RF power onto a living body according to the specific absorption rate (SAR)." ISHIHARA ET AL., col. 1, ll. 28-29. As a result, guidelines were established that not only defined SAR limits, but also body temperature limits. See ISHIHARA ET AL., col. 1, ll. 29-40. Ishihara et al., however, recognized a problem with then-conventional MR scans because "after the RF power is determined according to the SAR prior to the pulse sequence execution, the pulse sequence is executed regardless of a heat generation state of a body to be examined so that it has been impossible to confirm the safety of a body to be examined." ISHIHARA ET AL., col. 1, ll. 41-45. Accordingly, Ishihara et al. developed a technique to take the heat generation of the body into consideration and, in this regard, stated that "it is therefore an object of the present invention to provide a magnetic resonance imaging apparatus capable of measuring a temperature increase due to an application of

RF magnetic fields for data acquisition purpose." ISHIHARA ET AL. col. 1, l. 66 –